

Puget Sound HOV Lane Hours of Operation Evaluation

WSDOT Staff Recommendations Report to the Commission



December 2002

Conclusions from the Evaluation

Peak Period

- HOV lanes are working well and improving freeway efficiency during the peak periods.
 - HOV lanes on I-5 and I-405 carry more people than the average adjacent general purpose lanes.
 - HOV lanes on SR 167 and I-90 carry fewer people, but use is growing.
 - All the lanes provide a day time travel time advantage for transit, vanpools and carpools.

Conclusions from the Evaluation

Nights (Seven Days)

- At night, the HOV lanes do not provide a travel time advantage.
- It is feasible to open the lanes at night without negative effects to transit or HOVs.
- Benefits: Lower traffic densities, more room to maneuver, and, depending on what time opened, congestion relief.
- Costs: \$2 million for the change plus \$4 million for needed roadside safety improvements, plus up to \$11 million for spot location safety improvements on I-5 required by FHWA.
(Costs forecasted for the entire system)

Conclusions from the Evaluation

Weekend Days

- **HOV lanes are well used on weekend afternoons.**
- **When GP lanes are congested, HOV lanes get congested because of the large number of HOVs on the freeways. Therefore, travel time advantage is diminished on weekends.**
- **Special event transit service on I-5 south of downtown is a possible concern. Analysis is inconclusive, but this service probably has a travel time advantage until general purpose lanes become stop and go.**
- **Bottom line: It is feasible to open the lanes during weekends, but high use and potential impacts to special event service argue for caution.**
- **Benefits: No additional benefits identified**
- **Costs: No additional costs beyond those identified for nights**

Conclusions from the Evaluation

Weekday Mid-day (9 a.m. to 3 p.m.)

- Conclusions vary by corridor.
- On I-5, HOV volumes are high during the mid-day with no congestion relief benefit. Opening the lanes mid-day doesn't make much sense.
- On Eastside freeways (405, 167, I-90 east of 405 and 520 east of 405), mid-day HOV volumes are low – there is unused capacity in the HOV lanes.
- General purpose lanes on the Eastside freeways are congested mid-day. The potential exists for congestion relief if HOV lanes are opened, but...
- Any congestion relief benefit is short term. Growth in traffic volumes will erode much of this benefit within five years.
- The question is, how to use this underutilized capacity to improve freeway throughput.

Weekday Mid-day (9 a.m. to 3 p.m.)

■ Options

- ❖ **Keep the HOV lanes as they are** - While growth of HOV is higher than GP, underused capacity will still exist for years. Reinforces “empty lane”
- ❖ **Open the HOV lanes to GP traffic** - General purpose growth and shifting is expected to swamp this additional capacity within about 5 years.
- ❖ **Other approaches** – High Occupancy/Toll (HOT) Lanes – Would allow other users to buy in to HOV lanes. This could maximize throughput while keeping the lanes moving.

WSDOT Staff Recommendations to the Commission

1. Keep I-5 HOV lanes as HOV lanes 24/7

- Higher mid-day use minimizes congestion relief potential.
- Safety issues with narrow shoulders and spot concerns at Northgate and Southcenter would require higher investment.
- Special event transit service is mostly an I-5 issue.

Recommendations

2. Open the HOV lanes on Eastside Freeways (I-405, SR 167, I-90 east of I-405, and SR 520 east of I-405) at night from 7:00 p.m. to 5:00 a.m. seven days a week

- These can be opened while maintaining safety without undue expense (total cost to make this change is up to \$3.5 million which includes signage and needed safety improvements).
- 7:00 p.m. opening time is expected to provide some congestion relief benefits by dispersing the end-of-peak general purpose lane backups.

Recommendations

3. Retain HOV restriction on weekend days on all freeways (5:00 a.m. to 7:00 p.m.)



- HOV lanes are heavily used on weekend afternoons – this reinforces the HOV incentive
- Having the same HOV lane hours every day of the week makes public information and enforcement easier.

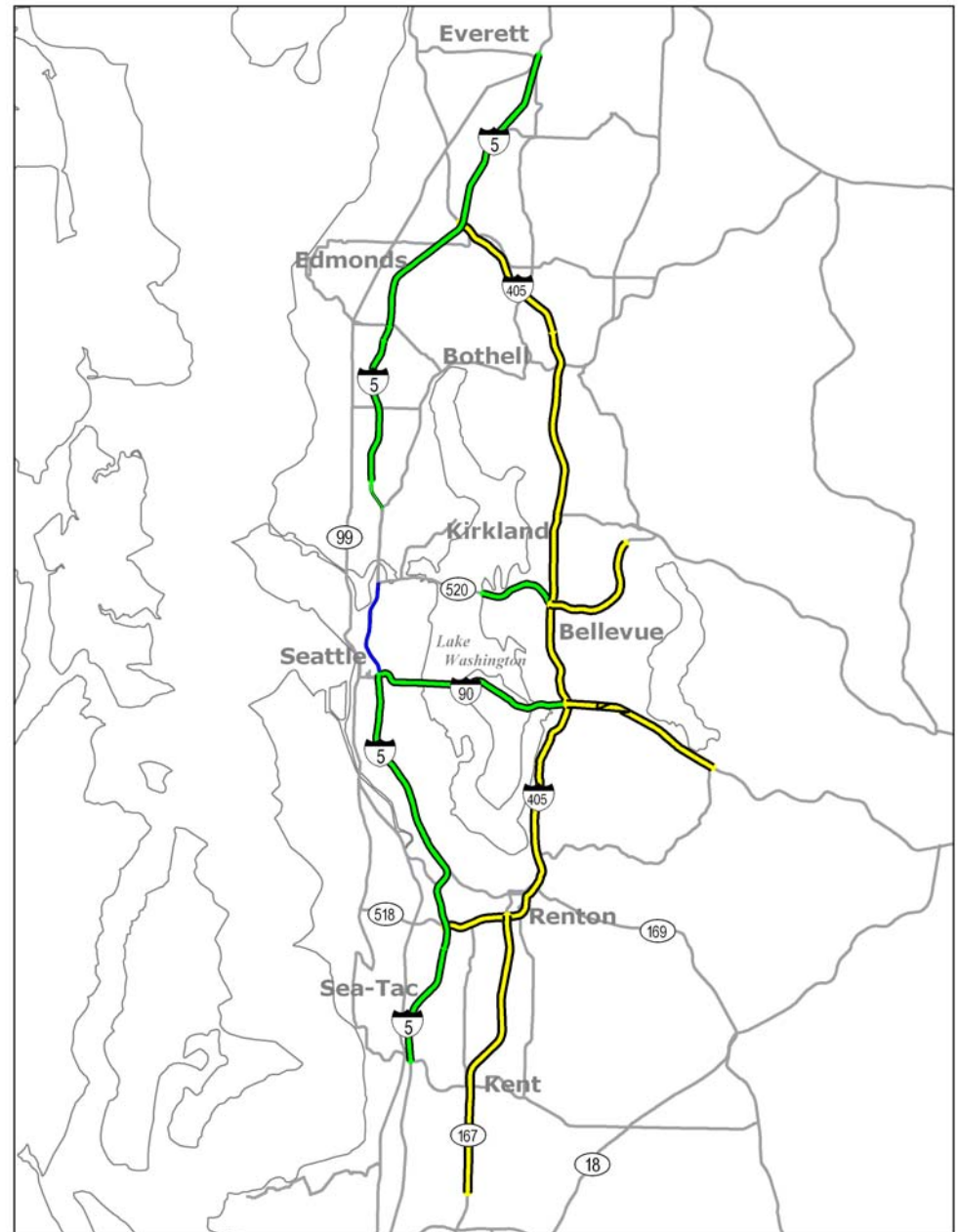
Recommendations

4. Pursue a HOT lane/managed lane strategy on I-405 and SR 167 to improve freeway throughput. Manage the underused capacity for long-term mobility benefits.

- WSDOT should develop a long term managed lane strategy to manage the existing roadway space more efficiently
- WSDOT should immediately pursue federal value pricing grant funding to develop and further the implementation of a managed HOT Lane system.

Puget Sound Region Core Freeway HOV System

-  HOV Lane Segments restricted to HOVs 24/7
-  HOV Lane Segments proposed for opening 7PM to 5AM every day



Next Steps

- ❖ Commission initial comment period on staff recommendation: November 14 – January 7
- ❖ Public Comment at December Commission meeting
- ❖ Presentations to interested groups
- ❖ Data and recommendations on website

For more information:

<http://www.wsdot.wa.gov/hov/pugetsoundeval>